APPENDIX L
IABZSAP Modification 2 - Response to Comments

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	CDPHE Comments, dated January 13, 2004	Response
1	Section 1.0 (page 1) The words "surface and subsurface" have been deleted throughout this document, which is appropriate wherever they are connected to action levels. However, there are distinctions between surface and subsurface sampling methods and how the sampling results are applied to surface and subsurface soil. The words should be inserted back into the first sentence of the first paragraph. Add the words "accelerated action" to the first sentence of the second paragraph ("...streamline the accelerated action decision process...") to distinguish this sampling process from the CRA sampling.	In accordance with the RFCA Modification (June 2003), there are no longer separate ALs for surface and subsurface soil (even through there may be different cleanup levels). Subsurface sampling methods are specifically called out in Section 4.9.3 (page 96). "Accelerated action" will not be added before the words decision process in the first sentence of the second paragraph. As specified in Section 3.1.1, first paragraph, first sentence: "The nature and extent of contamination must be known with adequate confidence to make accelerated action decisions." (page 42)
2	Section 1.1 (page 4) The advantages of the IA strategy would be clearer if the second to last sentence in the third paragraph of this section were expanded: The IA Strategy approach accelerates document preparation and review times by consolidating IHSSs into groups and requiring significantly fewer documents.	The following text was added to Section 1.1, third paragraph, fourth sentence: "...by consolidating IHSSs, PACs, and UBC Sites into groups that require significantly fewer documents." (page 4)
3	Section 1.3 (page 8) The third paragraph in this section should reflect the current SAP Addenda review and approval process. Addenda are often provided to CDPHE months prior to initiating work and the process generally involves a comment/comment resolution cycle, so the first sentence should read: "CDPHE and EPA will have 14 calendar days to review, provide comments, ask for an extension, or approve the Addenda." The 4th sentence should also	Section 1.3, third paragraph, first sentence was revised to state: "CDPHE and EPA will have 14 calendar days to review and provide comments on IABZSAP Addenda. DOE will discuss and resolve regulatory agency comments before a final addendum is issued." (page 8)

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8	Section 3.1.1 – *Inputs to the Decision* (page 44) To be consistent, the second sentence of item 4. a) should be modified: PCOC concentrations for organics will be compared to detection limits.	The text in Section 3.1.1, *Inputs to the Decision,* number 4, item a) was changed to the following: "Soil PCOC concentrations for inorganics will be compared to the background means plus two standard deviations. Soil PCOC concentrations for organics will be compared to MDLs for existing data or RLs for accelerated action data." (page 43)
9	Section 3.1.1 – *Inputs to the Decision* (page 45) The phrase "either nonradionuclides or" must be added back to items c) and e) in order to be compliant with RFCA Attachment 5 (Section 1.1) and the IGD (Section 3.7.2).	Nonradionuclides were added to Section 3.1.1, *Inputs to the Decision,* number 4, as a new item d). (page 43)
10	Section 3.1.1 – *Input to the Decision* (page 45) The five bullets under item f) go beyond determining the extent of an AOC and should be limited to that process or be re-titled. The description of this process should clarify that it begins with the data from an individual IHSS, PAC, or UBC rather than IHSS groups.	Section 3.1.1, *Inputs to the Decision*, number 4, item g (formerly f) correctly describes the AOC process. The data are collected and described for the entire IHSS Group not for individual IHSSs, PACs, or UBC sites. (page 44) Figure 20 (now Figure 19) was changed to clarify these concepts. (page 45) The term "hot spot" in these sections was changed to "localized area of elevated PCOC concentration."
11	Figure 20 The process in this figure goes beyond determining the extent of an AOC and should be limited to that process or it should be re-titled. It is unclear what is meant by "Manage or Evaluate" to the right of the decision diamond asking, "Is remediation needed?"	Figure 20 (now Figure 19) encompasses both the initial AOC determination based on existing data and the final AOC determination based on characterization and/or confirmation data. Figure 20 (now Figure 19) was modified to reflect multiple OUs. The title is correct; however, it was changed to "Initial and Final Area of Concern Determination" to more accurately reflect the contents of the Figure. The "remediation" box was changed to "no further accelerated action." (page 45)

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12	Section 3.1.1 – *Input to the Decision* (page 47) The Accelerated Action Ecological Screening Process (AAESP) has been added as the 7th input for making characterization decisions per this IABZSAP. However, the AAESP will not generate data on its own. Ecological data should be included as part of the "IABZSAP-generated characterization data" mentioned in item #6. Since the AAESP is largely independent from the IABZSAP decision process, including the AAESP as here as a source of data and in Appendix D may not be appropriate. It and the CRA Methodology should certainly be mentioned and their relationship to the IABZSAP summarized.	The text in Section 3.1.1, *Inputs to the Decisions,* number 7 was changed to the following: "Ecological information developed as part of the Accelerated Action Ecological Screening Evaluation (AAESE) (Appendix D)." (page 46)
13	Figures 22 and 24 The box at the top of these diagrams should read, "Usable Data (see Figure 21)." The new loop in these flow diagrams for nonradionuclides is unnecessary and is inconsistent with RFCA Attachment 5 and the IGD. All PCOCs should go through the paths that are now designated for radionuclides only. The term "single data point" in the Decision Rule 4 decision diamond should probably be replaced with "PCOC concentration" to be consistent with the text.	The first box at the top of Figures 22 (now Figure 21, page 48) and 24 (now Figure 23, page 55) was changed to "Dataset from DQF Process (Figure 20)." A separate loop for nonradionuclides is required and a box was added for the agreed-to SOR. In accordance with RFCA, the SOR for the RFCA radionuclides must be calculated. The term "single data point" was changed to "PCOC concentration."
14	Figure 23 The box at the top of the diagram should read, "Usable Data (see Figure 21)." The words "for radionuclides" should be deleted from the second decision diamond.	The first box at the top of Figure 23 (now Figure 22, page 49) was changed to "Dataset from DQF Process (Figure 20)." A new decision diamond was added for nonradionuclides.
15	Section 3.1.1 – *Decision Rules* (page 51) The phrase "metal and radionuclide PCOCs" should be changed to "inorganic and radionuclide PCOCs" twice in Decision Rule #2.	The phrase "metal and radionuclide PCOCs" in Section 3.1.1, *Decision Rules*, Decision Rule 2, was changed to "inorganic and radionuclide PCOCs." (page 46)

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	A hot spot evaluation step should be included in the decision rules as it is in Figure 24. Section 5.2 should be referenced.	The following decision rule was added to Section 3.1.1 *Decision Rules*, Decision Rule 9 (page 50) and to Section 3.2.1 *Decision Rules,* Decision Rule 8 (page 56): "If a single maximum surface soil COC concentration is equal to or greater than the RFCA AL and the ratio of the 95% UCL of the mean concentration to its respective RFCA AL is greater than or equal to 1, additional evaluation as a potential localized area of elevated PCOC concentration (hot spot) will be necessary."
	Decision rules 4, 5, 6, and 7 must be revised to comply with RFCA Attachment 5 and the IGD. The following revisions are suggested: If a single maximum PCOC concentration in surface soil is equal to or greater than its RFCA AL, aggregation and evaluation as described in decision rule 6 are necessary in accordance with RFCA requirements. If surface soil concentrations at a given location for 2 or more PCOCs exceeds 10% of their respective WRW ALs (10^{-6} risk or 0.1 of HI), then sum-of-ratios (SOR) values will be separately calculated, as necessary, for radionuclides, for non-radiological carcinogenic PCOCs, and for non-radiological non-carcinogenic PCOCs. If an SOR value at a given location is greater than or equal to 1, aggregation and evaluation as described in decision rule 7 will be made in accordance with RFCA requirements. Otherwise the PCOC concentrations are less than the RFCA ALs and the soil does not need to be further evaluated or remediated in accordance with RFCA requirements.	The text is correct as stands. Decision Rule 5 (now 6) must be included because it is the radionuclide SOR. The following decision rule was added to Section 3.1.1, *Decision Rules*, Decision Rule 7: "If more than one nonradiological surface soil contaminant concentration is detected above RLs for organics or background means plus two standard deviations for inorganics and exceeds 10 percent of the respective WRW AL, then a SOR at a given location will be calculated for those contaminants that exceed 10 percent of their WRW AL. If a SOR exceeds 1, the nonradiological carcinogenic contaminants and nonradiological noncarcinogenic contaminants may each be summed separately. Data will be aggregated and evaluated as described in Decision Rule 8 in accordance with RFCA requirements. Otherwise, the soil does not need to be further evaluated or remediated in accordance with RFCA requirements. If further evaluation is necessary, the data may also be summed by target organ." (page 50) The other decision rules are correct as stand. Replacing "evaluate or manage" with "remediation" is not appropriate in this decision

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	If the ratio of the 95% UCL of the mean concentration for a PCOC in surface soil to its respective RFCA AL across the AOC is greater than or equal to 1, the PCOC is considered a COC and a remedial action decision will be made in accordance with RFCA requirements. Otherwise the PCOC concentrations are less than RFCA ALs in that AOC and the soil does not need to be further evaluated or remediated in accordance with RFCA requirements. If the SOR of the 95% UCL of the mean concentration for all PCOCs identified in Decision Rule #5 to 10% of their respective ALs across the AOC is greater than or equal to 1, the PCOCs are then considered COCs. Remedial action decisions based on COCs will be made in accordance with RFCA requirements. Otherwise the PCOC concentrations are less than RFCA ALs in that AOC and the soil does not need to be further evaluated or remediated in accordance with RFCA requirements. If soil contamination is identified below 6 inches in depth, evaluation as described in the RFCA Subsurface Soil Risk Screen is necessary.	document because the remedial decision is part of the ER RSOP process not the SAP process. The following decision rules were added to Section 3.1.1 *Decision Rules*: Decision Rule 9 (page 50) "If a single maximum surface soil COC concentration is equal to or greater than the RFCA AL and the ratio of the 95% UCL of the mean concentration to its respective RFCA AL is greater than or equal to 1, additional evaluation as a potential localized area of elevated PCOC concentration (hot spot) will be necessary." Decision Rule 10 (page 50) "If a single subsurface soil COC concentration is equal to or greater than the RFCA AL, evaluation as described in the RFCA Subsurface Soil Risk Screen (SSRS) is necessary."
16	Section 3.1.2 – *Inputs to the Decision* (page 54) The fourth item of information, MDLs, should also include method activity limits (MALs) to cover radionuclide COCs.	The text in Section 3.1.2, *Inputs to the Decisions*, number 4 was changed to the following: 4. "RLs/MDLs for accelerated action data and MDLs for existing data for IA and BZ COCs and analytical methods are presented in Appendix E. Analytical methods are organized in tables by general analytical suite. The tables present the minimum required analytes within each respective suite, as well as the required

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		analytical sensitivity for each analyte. Sensitivities are expressed as RLs or MDLs, and are specific to the measurement systems used for IA and BZ sample analysis." (page 52)
17	Section 3.1.2 – *Inputs to the Decision* (page 55) The phrase "either nonradionuclides or" must be added back to items c) and e) in order to be compliant with RFCA Attachment 5 (Section 1.1) and the IGD (Section 3.7.2).	Nonradionuclides were added to Section 3.1.2, *Inputs to the Decision*, number 6, item d). (page 53)
18	Section 3.1.2 – *Decision Rules* (pages 56 and 58) The comments above on the Decision Rules in Section 3.1.1 also apply to this section. Because these decision rules concern confirmation sampling, the term COC rather than PCOC should be used throughout.	"PCOC" was changed to "COC" as appropriate in Section 3.1.2 *Decision Rules.* The phrase "metal and radionuclide COCs" in Section 3.1.2, *Decision Rules*, Decision Rule 2, was changed to "inorganic and radionuclide COCs." (page 54) The following decision rule was added to Section 3.1.1 *Decision Rules*, Decision Rule 9 (page 50) and to Section 3.2.1 *Decision Rules,* Decision Rule 8 (page 56): "If a single maximum surface soil COC concentration is equal to or greater than the RFCA AL and the ratio of the 95% UCL of the mean concentration to its respective RFCA AL is greater or equal to 1, additional evaluation as a potential localized area of elevated PCOC concentration (hot spot) will be necessary." The text is correct as stands. Decision Rule 5 must be included because it is the radionuclide SOR. The following decision rule was added to Section 3.1.2, *Decision Rules*, Decision Rule 6: "If an action was required at a given location based on a nonradiological surface soil SOR and if more than one nonradiological contaminant concentration is detected

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		above RLs for organics or background means plus two standard deviations for inorganics and exceeds 10 percent of the respective WRW AL, then a SOR at a given location will be calculated for those contaminants that exceed 10 percent of their WRW AL. If the SOR exceeds 1, the nonradiological carcinogenic contaminants and nonradiological noncarcinogenic contaminants may each be summed separately. Data will be aggregated and evaluated as described in Decision Rule 7 in accordance with RFCA requirements. Otherwise, the soil does not need to be further evaluated or remediated in accordance with RFCA requirements. If further evaluation is necessary, the data may also be summed by target organ." (page 56) The other decision rules are correct as stand. Replacing "evaluate or manage" with "remediation" is not appropriate in this decision document because the remedial decision is part of the ER RSOP process not the SAP process. The following decision rules were added to Section 3.1.2, *Decision Rules*: Decision Rule 8 (page 56) "If a single maximum surface soil COC concentration is equal to or greater than the RFCA AL and the ratio of the 95% UCL of the mean concentration to its respective RFCA AL is greater than or equal to 1, additional evaluation as a potential localized area of elevated PCOC concentration (hot spot) will be necessary." Decision Rule 9 (page 56) "If a subsurface soil COC concentration is equal to or greater than the RFCA AL, evaluation as described in the RFCA SSRS is necessary."

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		Additionally, please see responses to Comments 9, 10, 11, 13, and 14.
19	Section 3.1.3 (page 60) The CRA will evaluate more than just the "soil contamination in accelerated action areas within the IA and BZ." This section should explain that data for the CRA will come from a combination of sources: 1) characterization sampling if the sample location remains intact, 2) confirmation sampling in remediated areas, and 3) any additional sampling required by the CRA DQOs to fill data adequacy needs (see Section 4.0).	Data used in the CRA are described in the CRA Methodology and are not addressed in the IABZSAP. The following text was added to Section 1.2, paragraph 3: "While the IABZSAP describes sampling methods for CRA sampling, specific CRA DQOs are described in the CRA Methodology. Separate CRA sampling addenda will be developed to describe CRA sampling in accordance with CRA DQOs." (page 7)
20	Section 4.0 (page 66) Figure 25 does not show IHSSs, PACs, and UBCs as implied in the first bullet.	The text in Section 4.0, paragraph 1, bullet 1 was changed to "Figures 1 and 2." (page 58)
21	Figures 26, 27, and 28 In these flow diagrams, PCOCs are eliminated and hot spots are evaluated before sampling begins.	These diagrams (now Figures 25, 26, and 27) are used to describe the process, using existing data, to determine sampling locations. Please refer to Figure 35 for information on when hot spots are evaluated. The words "hot spot" on these diagrams was changed to "localized areas of elevated PCOC concentration." Additionally, the text of the lead-in box (Figure 20) was clarified.
22	Section 4.2.2 (page 73) The paragraph which begins, "This methodology will provide..." could be added to the end of the second method of developing statistical grids. The next paragraph, which begins "At UBCs and IHSSs or	The paragraph break in Section 4.2.2 between bullet 2 and the next paragraph was removed. The second paragraph break in Section 4.2.2 was removed and the text is now part of Method 2. (page 65).

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	PACs...", could become method #3.	
23	Section 4.2.2 (page 74) The new discussion about sampling grid size differs from the previous discussion of grid size in the now deleted Section 4.3. This method should be more completely explained to show how it satisfies the Gilbert methodology and to explain whether it satisfies MARSSIM protocols. The discussion about the statistically minimum number of samples has been deleted from the paragraph about small-sized IHSSs and PACs. The minimum number of 5 samples remains in sampling location method #2 in Section 4.5.2 (pages 92). This deletion should be explained.	The references to Gilbert's methodology are in Section 4.2.2, page 63. The IABZSAP methodology more than satisfies MARSSIM requirements because MARSSIM only requires 14 samples at all areas of concern. Section 4.2.2 (pages 63 through 66) pertains to characterization sampling and Section 4.5.2, which is now Section 4.4.1 (page 81) pertains to confirmation sampling.
24	Section 4.5.2 (page 92) The last sentence in Section 4.5.1 states that field analytical data may be used for confirmation sampling if the regulatory agencies concur. The 5th sampling location method in Section 4.5.2 assumes this concurrence with respect to using HPGe for radiological contamination. The guidance and policy from EPA and CDPHE regarding radiological confirmation sampling has always been that field data could be used to support and supplement laboratory analyses, but laboratory data must be the primary basis for final completion of remediation decisions.	By approving the IASAP and BZSAP the regulatory agencies agreed that this approach was acceptable (IASAP and BZSAP Section 4.5.2). The use of field analytical data for confirmation sampling was discussed with CDPHE and EPA and approved by EPA for use in the BZ. As such, this concept needs to be included in the IABZSAP. (Section 4.4.2, fourth bullet, page 82)

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25	Table 8 (page 127) Footnote 2 should read, "The AOC is initially based on...."	The text in Section 5.1.1, footnote to Table 8, was changed as suggested. (page 103)
26	Section 5.1.1 (page 12) The last sentences of the last two paragraphs are specific to the CRA data aggregation process and should be deleted.	The last sentences of the last two paragraphs in Section 5.1.1 were deleted. (page 103)
27	Section 5.1.2 (page 128) Step 2 should state, "SORs will be calculated when the concentrations of 2 or more PCOCs exceed 10% of their respective ALs." Step 3 should state, "If the point-by-point comparison indicates that an analyte exceeds the RFCA AL or the SORs exceed 1, then the 95% UCL for that analyte will be calculated across the AOC." These steps seem redundant and slightly inconsistent with the decisions rules in Section 3.1.1.	Section 5.1.2 was changed to match the DQOs. (page 103)
28	Section 6.1.9 (page 143) Reinsert the words "and nonradionuclides" back into the last bullet.	The last bullet in Section 6.1.9 was not changed. A new bullet was added for nonradionuclides. (page 118)
29	EDITORIAL / TYPOGRAPHICAL: Have or will the appropriate changes due to RFCA modifications also be made to the appendices?	Yes, the appendices were modified to combine the IASAP and BZSAP, as appropriate, and to bring them into compliance with the RFCA Modification of June 2003. Appendix A was not modified. Appendix B was modified to combine the IA and BZSAPs. Appendix C was modified to combine the IASAP and BZSAP text. Appendix D was modified to present the AAESE.

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		Appendix E was modified to incorporate WRW ALs and to separately list MDLs for existing data (consistent with the IASAP and BZSAP) and RLs for accelerated action data. Appendix F was modified to add a column for the background means plus two standard deviations. The surface soil background value for uranium, total was added and the subsurface soil background values for several metals were corrected. Appendix G was modified to change Tier I and Tier II ALs to WRW ALs. The appendix letter was changed to H. Appendix H was modified to change Tier I and Tier II ALs to WRW ALs, combine the IA and BZSAPs, and to further describe QC samples. The appendix letter was changed to G. Appendix H-1was modified to change Tier I and Tier II ALs to WRW ALs and combine the IA and BZSAPs. The appendix letter was changed to G. Appendix I was modified to clarify that the regression was for in-situ HPGe analysis and to change Tier I and Tier II ALs to WRW ALs. Appendix J was modified to change Tier I and Tier II ALs to WRW ALs. Appendix K was not modified. The appendices will be provided in the final document.
	Due to deletions, some subsections need to be re-numbered. Page 1 – There is an extra "and" in the last sentence of the second paragraph. Suggest combining the last two sentences of the second paragraph in Section 1.0: IABZSAP Addenda will supplement the IABZSAP by providing specific characterization plans and will be	The agencies were provided with a redline/strikeout version that DOE recognizes can be confusing. The sections and subsections were renumbered when the redline/strikeout was removed. The extra "and" was removed from Section 1.0, second paragraph, last sentence.. (page 1) The last two sentences of Section 1.0, paragraph 2, were combined as suggested. (page 1)

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	prepared when circumstances present characterization opportunities.	
30	Page 43 – Add "and" after decision #1 under *Identification of Decisions*; remove "and" at the end of decision #2 and add a period.	In Section 3.1.1, *Identification of Decisions* "and" was removed at the end of the second bullet of Section 3.1.1 and a period was added. "And" was added to the end of the first bullet. (page 42)
31	Pages 45 and 55 – Item e) should be changed to d).	This change was made when the redline/strikeout was removed. (pages 43 and 53)
32	Page 47 – The "1" labeling the first item under *Study Boundaries* has been struck out, but should be left as is. In the second item under *Study Boundaries*, the phrase, "located in the IA and BZ," is superfluous. In the fourth item, delete "IA" and change "IASAP" to "IABZSAP."	This change was made when the redline/strikeout was removed. In Section 3.1.1, *Study Boundaries* the "IA" in the fourth bullet (now the third bullet) was deleted and "IASAP" was changed to "IABZSAP." (page 46) In Section 3.2.1, *Study Boundaries* the "IA" in the sixth bullet was deleted. (page 54)
33	Figure 22 – The word "No" is missing between Decision Rule 4 and Decision Rule 5.	The word "No" was added between Decision Rule 4 and Decision Rule 5 on Figure 22 (now Figure 21). (page 48)
34	Page 58 – Remove the "4" at the top of the page and adjust the remaining numbers.	This change was made when the redline/strikeout was removed.
35	Page 60 – The phrase "within the IA and BZ" is repeated in the first paragraph of Section 3.1.3.	In Section 3.1.3, first paragraph, last sentence, the second occurrence of the phrase "within the IA and BZ" was removed. (page 57)
36	Page 73 – Add the word "detector" or "instrument" after the second HPGe in item 2.	In Section 4.2.2, item 2, the word "detector" was added after the second occurrence of HPGe. (page 65)
37	Page 91 – The number of the first sampling location method should be changed from 2 to 1.	This change was made when the redline/strikeout was removed. (page 81)
38	Page 93 – It is unclear why "4.6" is struck out to the left of the Characterization Sampling Strategy title.	This change was made when the redline/strikeout was removed. This section is now Section 4.5. (page 83)

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39	Figure 33 – It is unclear why this map is needed, since all the features are already on Figures 31 and 32.	The former Figure 33 was deleted.
40	Page 134 – Change the reference in the third bullet to Section 5.3.4.	The reference in Section 5.3.3, third bullet, was changed to Section 5.3.4. (page 110)
41	App. E – The title of this appendix should probably include "minimum detectable activities" to cover radionuclide PCOCs.	Based on the modifications to Appendix E, the title was changed to include "reporting limits."

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	1) Section 1.1.1, Accelerated Action Ecological Risk Screen Process, provides a good description of the process that will be used to identify data gaps associated with ecological receptors (i.e., the ecological action levels will be used during the Accelerated Action Ecological Screen). However, it is still not clear how and when the ecological action levels will be used in conjunction with the process to be used for the Wildlife Refuge Worker (WRW) Action Levels, as outlined in Section 3.0 (Inputs to the Decision). The presentation (as outlined in Item 4) appears to suggest that the ecological action levels would be used following a human health screening process, or that it will be two separate efforts. It is not evident as to why the WRW Action Levels are prioritized over the ecological action levels. It would be more efficient if both human health and ecological action levels could be used simultaneously in order to document data gaps. In addition, it is not evident whether the process as outlined, which utilizes a comparison to a background mean plus two standard deviations, would result in eliminating chemicals of potential ecological concern that may be above an ecological action levels. The document should indicate that the ecological action levels will be compared with WRW Action Levels to determine whether the lowest action level is associated with the WRW or an ecological receptor. If the lowest action level is associated with ecological receptors, then the Accelerated Action Ecological Screen Process will be	A sitewide Accelerated Action Ecological Screening Evaluation will be performed using a methodology developed by the inter-agency Risk Assessment Working Group.

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	conducted. The document should also indicate that a table which presents a comparison of all action levels will be presented in the document.	
	2) It is indicated that the IABZSAP DQOs apply to surface and subsurface soil encountered during characterization and confirmation sampling. The DQOs should be adjusted to include provisions for sediment and surface water.	Consistent with RFCA the IABZSAP applies to surface and subsurface soil only.
	3) The document provides a list of 'PCOCs'. Please add dioxins to the list	Individual analytes are not included in the PCOCs, only groups of analytes. Individual PCOCs are determined on an IHSS Group basis.
	4) Item 2, Method Detection Limits (MDLs), indicates that the lowest RFCA Als for any exposure scenario are presented in Appendix E. Appendix E only contains human health action levels. The MDLs should be compared to ecological action levels, or PRGs, as available, to identify any MDLs that will above the action level. A table should be added to the text of the document to clearly identify all analytes with MDLs above the lowest action level	Appendix E was revised so that it is consistent with RFCA.
	5) Decision Rules: Which data points are being used in rule 5? This needs to be clearly specified in order for the rule to make sense	Section 3.1.1, *Decision Rules*, in Decision Rules 6 and 7 (page 50), the phrase "at a given location" was added to clarify that the SOR is calculated by location. Section 3.1.2, *Decision Rules*, in Decision Rules 5 and 6 (page 56), the phrase "at a given location" was added to clarify that the SOR is calculated by location.

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	General Comments	
1	This document is one piece of the overall effort to characterize and remediate Rocky Flats, and as a result of other efforts that are currently in progress, it is difficult to keep all documents and agreements consistent with each other. Some gaps and inconsistencies are present in this document that should be addressed and they are primarily related to efforts of the Risk Assessment Working Group to develop the final work plan for the Comprehensive Risk Assessment (CRA). Discussions regarding sampling in the buffer zone of unsampled areas on a 30 acre grid need to be finalized and the resulting agreed upon plan needs to be incorporated into this document. In addition, the DQOs described in this document need to be consistent with those of the CRA and the Data Adequacy Report.	CRA issues, including DQOs and sampling in unsampled areas are not addressed in the IABZSAP they will be included in the CRA Methodology and the Data Adequacy Report. The CRA Working Group has not yet finalized the CRA Methodology or the Data Adequacy Report. The following text was added to Section 1.2, paragraph 3: "While the IABZSAP describes sampling methods for CRA sampling, specific CRA DQOs are described in the CRA Methodology. Separate CRA sampling addenda will be developed to describe CRA sampling in accordance with CRA DQOs." (page 7)
	Specific Comments:	
2	Section 3.1.1. Page 43, The Problem There is no mention in this section that one of the main purposes it is serving is to determine whether an accelerated action should be taken based upon the data that is collected. Therefore this should be included in the problem statement as well as in many other areas throughout the section, so that it is clear that the results of the characterization effort will be used to take accelerated actions where necessary and that	The decision whether to conduct an accelerated action is part of the ER RSOP not the IABZSAP. The IABZSAP describes the data evaluation criteria. As specified in Section 3.1.1, *The Problem*, first sentence "The nature and extent of contamination must be known with adequate confidence to make accelerated action decisions". (page 42)

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	accelerated actions are intended to be the main vehicle of remediation at the site.	
3	Page 45, Inputs to the decision: Section 4) RFCA comparison criteria: It should be mentioned here that RFCA ALs include not only human health, but also ecological levels. In addition, it should be mentioned that the eco levels are still in development and therefore, until they are final, all areas that undergo this sampling and evaluation process must be evaluated for ecological purposes at some later time.	A sitewide Accelerated Action Ecological Screening Evaluation will be performed using a methodology developed by the inter-agency Risk Assessment Working Group. In Section 3.1.1, *Inputs to the Decision*, number 4, "WRW" was added. (page 43) In Section 3.1.2, *Inputs to the Decision, number 6,* "WRW" was added. (page 53)
4	Section c) An exceedance is defined as either the ratio of each PCOC concentration to its AL > 1 or as the SOR for radionuclides > 1. Does this mean that rads are subject to both comparison criteria? If not, it should be clarified that only non-rads are subject to the first comparison	Section 3.1.1, *Inputs to the Decision*, number 4, item c) is specific to radionuclides. A separate item, item d) was added for non-radionuclides. (page 43) Section 3.1.2, *Inputs to the Decision*, number 6, item c) is specific to radionuclides. A separate item, item d) was added for non-radionuclides. (page 53)
5	Section e) Basically the same criteria are used to determine when PCOC concentrations are below RFCA Als. As stated above, the document needs to be clarified as to whether only non-rads are subject to the first comparison. Actually there really is no reason to define when data is "Below ALs" and the document would be improved by just deleting this section.	Section 3.1.1, number 4, and Section 3.1.2, number 6 and all sub-items are consistent with the IGD as specified by the regulatory agencies. Section 3.1.1, number 4, Item e is specific to radionuclides. The nonradionuclide SOR is described in item f. (page 44). Section 3.1.2, number 6, Item e is specific to radionuclides. The nonradionuclide SOR is described in item f. (page 53).

	EPA Comments, dated October, 2003	Response
6	Page 51, Decision Rules Rule 2: This rule addresses analytes that have ALs which are less than background levels. Such a situation indicates that one of these levels needs to be changed. In addition, it would be helpful to compile a list showing which analytes have AL < background levels so that these can be reviewed for possible revision. Also, in this situation would the AL be used or would the background level be used in making a determination about whether a PCOC becomes a COC?	DOE concurs that background values for some analytes should be recalculated. This issue is being discussed. There are no analytes with WRW ALs less than background.
7	Rule 3: Without a definition of the work "adequate", this rule is essentially meaningless.	In Section 3.1.1, *Decision Rules*, Decision Rule 3, the first occurrence of the word "adequately" was deleted (page 50). In Section 3.12, *Decision Rules*, Decision Rule 3, the first occurrence of the word "adequately" was deleted (page 54).
8	Rule 6: If this rule only applies to non-rads, then that should be explicitly stated in the rule itself.	In Section 3.1.1, *Decision Rules*, Decision Rule 5 (now 6) was changed to indicate that it is for radionuclides. A new decision rule, Decision Rule 7 states that this rule is for nonradionuclides. (page 50) In Section 3.1.2, *Decision Rules*, Decision Rule 5 was changed to indicate that it is for radionuclides. A new decision rule, Decision Rule 6 states that this rule is for nonradionuclides. (page 57)
9	Rule 7: This rule should also state that the evaluation should follow the Ecological Accelerated Action Screening Process.	A sitewide Accelerated Action Ecological Screening Evaluation will be performed using a methodology developed by the inter-agency Risk Assessment Working Group. A decision rule is not

	EPA Comments, dated October, 2003	Response
		required.
10	Figure 20, AOC Determination This figure should be renamed, since it covers much more than just AOC determination. It should also show that the eventual use of the data will be in the CRA.	Figure 20 (now Figure 19) (page 45) encompasses both the initial AOC determination based on existing data and the final AOC determination based on characterization and/or confirmation data. Figure 20 (now Figure 19) (page 45) was modified to reflect multiple OUs. The title is correct, however it was changed to "Initial and Final AOC Determination" to more accurately reflect the contents of the Figure. The "remediation" box was changed to "no further accelerated action". While the data may be used in the CRA, the determination of what data will be used is part of the CRA Data Adequacy Report

Figure 1
Industrial Area Groups

BUFFER ZONE

INDUSTRIAL AREA

SW2

EXPLANATION

IHSS Groupings

000-1	500-7
000-2	600-1
000-3	600-2
100-1	600-3
100-2	600-4
100-3	600-5
100-4	600-6
100-5	700-1
300-1	700-2
300-2	700-3
300-3	700-4
300-4	700-5
300-5	700-6
300-6	700-7
400-1	700-8
400-2	700-10
400-3	700-11
400-4	700-12
400-5	800-1
400-6	800-2
400-7	800-3
400-8	800-4
400-10	800-5
500-1	800-6
500-2	900-1
500-3	900-3
500-4	900-4&5
500-5	SW-2
500-6	

Standard Map Features

- Buildings and other structures
- Demolished buildings and Other Structures
- Solar Evaporation Ponds (SEPs)
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Paved roads
- Dirt roads
- Industrial Area Operable Unit Boundary
- Original Process Waste Lines
- Location of Original Process Waste Lines that may have been removed

DATA SOURCE BASE FEATURES:
RACs
Historical Release Report (HRR)
2nd Annual Update
Sept. 30, 1997
Individual Hazardous Substance Sites (IHSS)
DOE, 1992, HRR Report and Subsequent Updates.
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RFS, Las Vegas.
Digitized from the orthophotographs. 1/95

Scale = 1 : 3500
1 inch represents 300 feet

100 0 200 400 ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

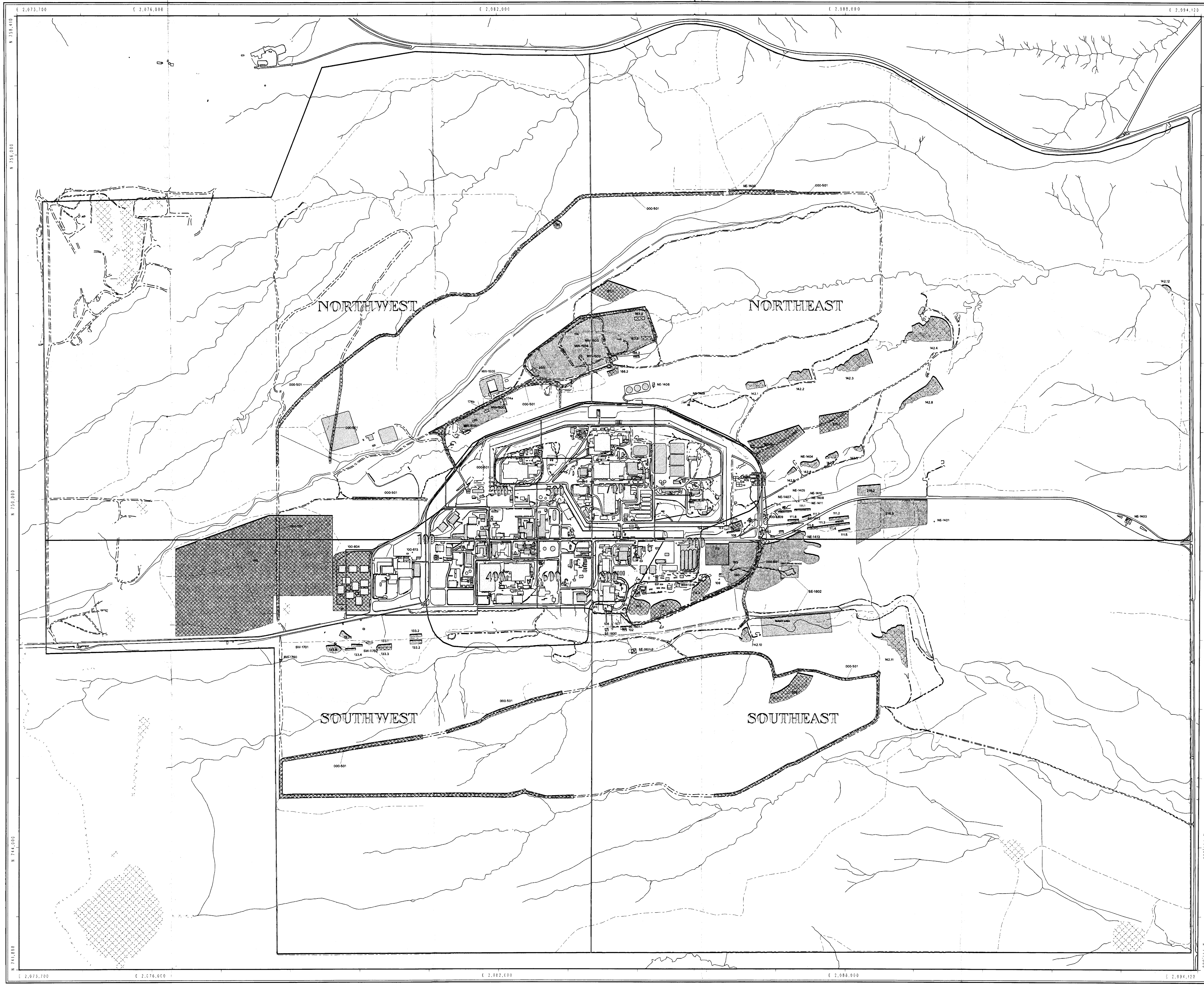
Prepared by: CH2MHILL

Prepared for: KAISER+HILL COMPANY

October 27, 2004

Figure 2

Buffer Zone IHSSs and PACs



EXPLANATION

- BZOU
- OU1
- OU5
- OU6
- OU7
- OU11
- OU16
- PAC
- Accepted NFAs
- HRR Zone Boundary
- Industrial Area Boundary

Standard Map Features

- Buildings and other structures
- Demolished buildings and Other Structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs. 1/95

Scale = 1 : 7280
1 inch represents approximately 607 feet

500 0 1000 2000ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

Prepared by: CH2MHILL

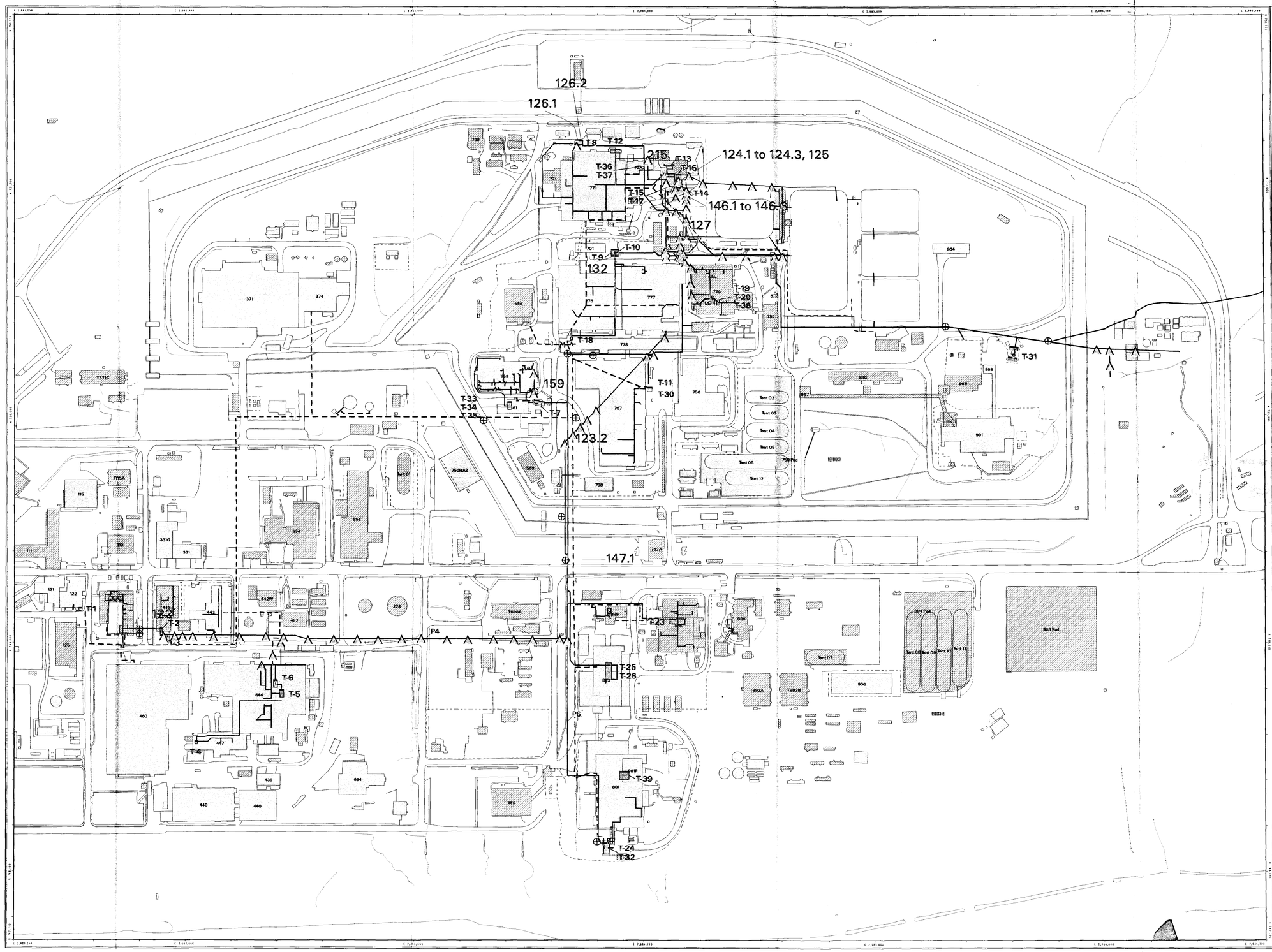
Prepared for: KAISER•HILL COMPANY

April 06, 2004

NT_Svr w:/projects/fy2002/02-0195/bz_ihss_pacs_nfa-bb_fig2.aml

Figure 30

Original Process Waste Lines



EXPLANATION

- Tanks of Concern
- Foamed and Stabilized Tanks (Source Removed - Interim Status)
- Remaining Tanks
- Sumps
- Process Waste IHSS Locations (Former OU 9 IHSSs)
- Original Process Waste Lines (IHSS 000-121)
- OPWL Removed
- OPWL Between 3 and 4 Feet
- OPWL Does Not Exist
- New Process Waste Lines (PAC 000-504)
- NPWL Removed
- NPWL Cleaned - Closed
- Known Leaks
- Suspected Leaks
- Manholes

Standard Map Features

- Buildings and other structures
- Demolished buildings and Other Structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Paved roads
- Underground tunnels

DATA SOURCE BASE FEATURES:
Individual Hazardous Substance Sites (IHSSs)
DOE, 1992, HRR Report and Subsequent Updates.

NOTES:

The Original and New Process Waste Line locations shown on map are approximate and should not be used for determining the line location when performing excavation work.

PAC 000-500 (Sanitary Sewer System) and PAC 000-505 (Storm Drains) not shown.

All IHSS and PAC's Boundaries are Approximate. For more detail, please contact Environmental Restoration (X4605) for the following document:

Historical Release Report (HRR) September 2003 Annual Update

Scale = 1 : 2450
1 inch represents approximately 204 feet

100 0 200 400ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

Prepared by: CH2MHILL

Prepared for: KAISER•HILL COMPANY

April 06, 2004

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Figure 32
Known and Suspected OPWL Leak and Sampling Locations

KEY

- Sample Locations of Suspected Leaks Outside 700 Area
- Sample Locations of Suspected Leaks in 700 Area
- Reported OPWL Leaks
- Previously Collected Samples at UBCs
- Vaults and Manholes
- Pipes Below 6 feet in 700 Area
- Removed Pipes
- Existing Pipe Above 3 feet
- Dirt Road
- Paved Road
- OPWL Tanks
- OPWL
- UBC
- Building/Structure
- IHSS

Disclaimer: Assume all locations and features are approximate. Locations and features are estimated and need further evaluation.

N
W E
S

500 0 500 Feet

Scale 1: 3,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

July 2003

Prepared by: RAMS

Prepared for: KAISER-HILL COMPANY

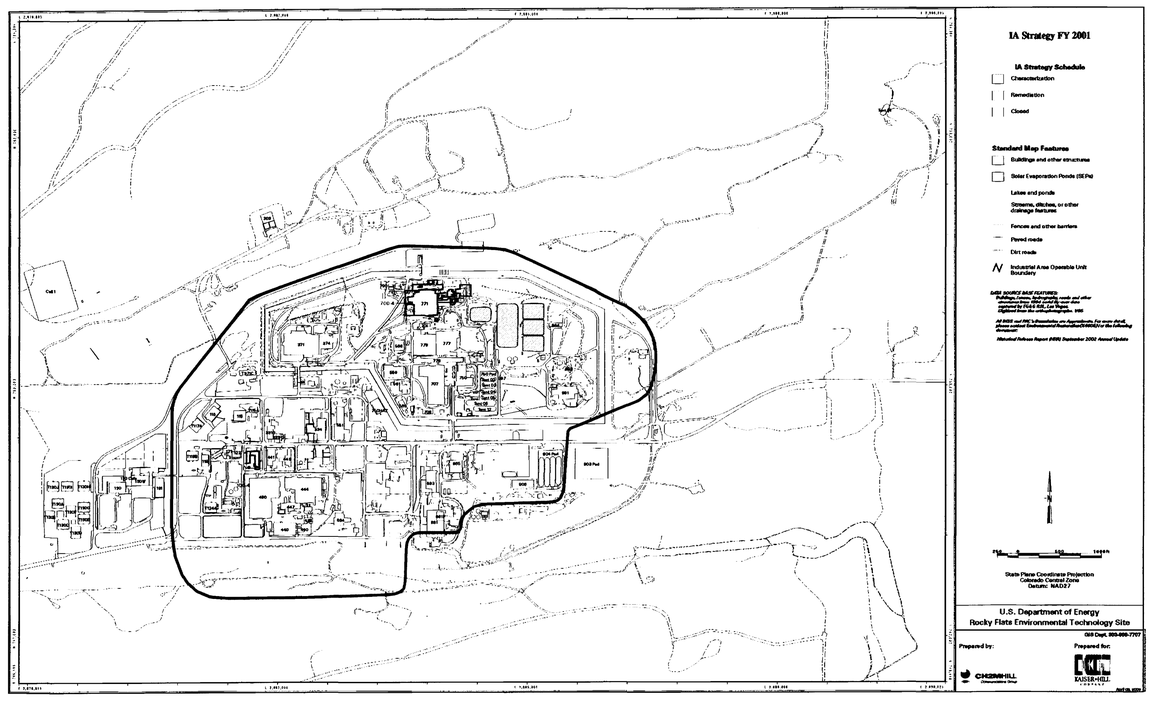
File: W:\Projects\Fy2003\rfca_project _2-03.apr

CH2MHILL

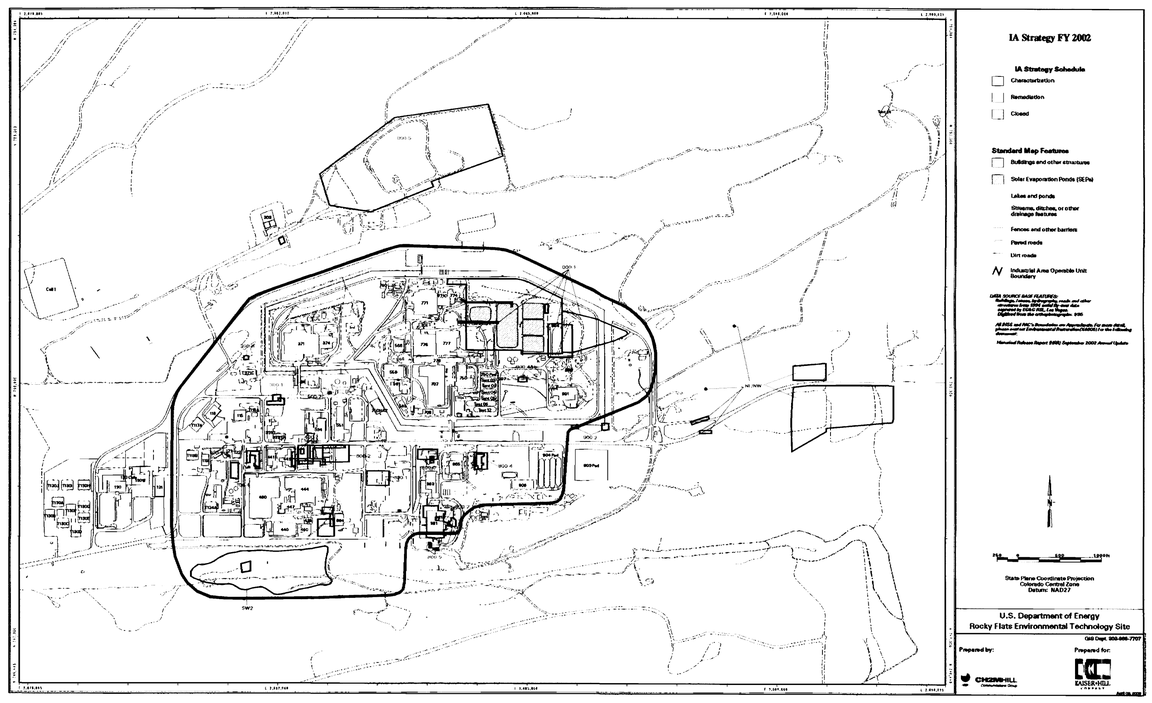
KAISER•HILL COMPANY

Figure 37
IHSS Group Schedule

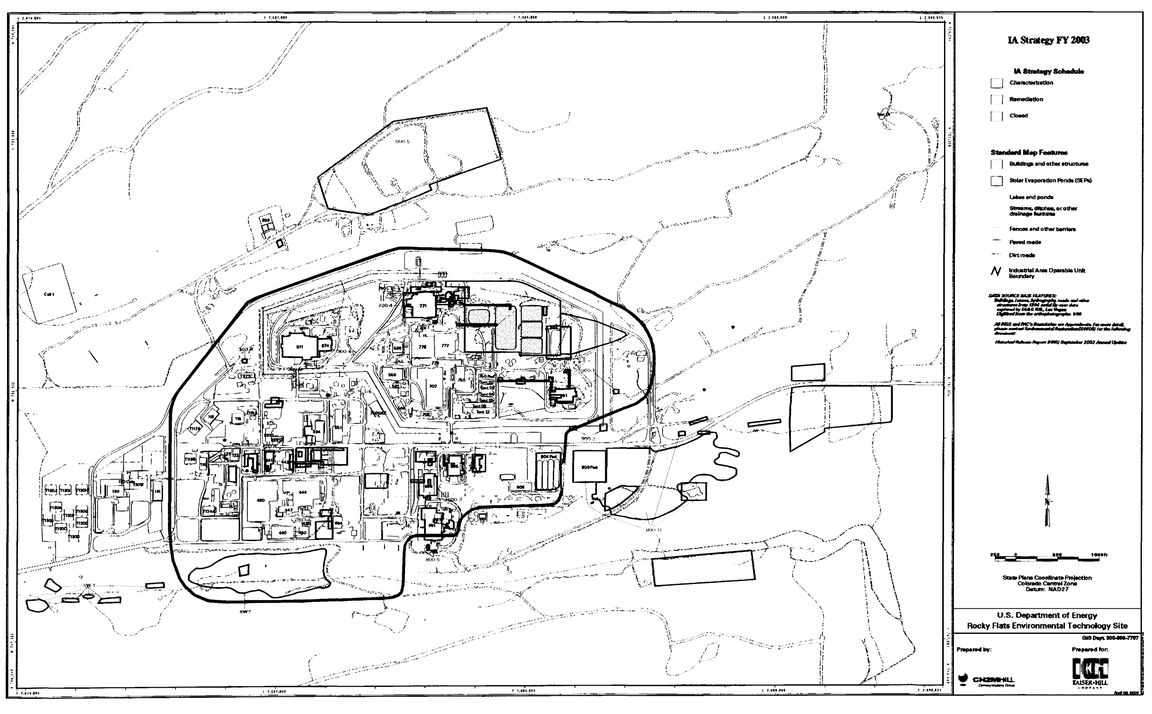
FY 2001



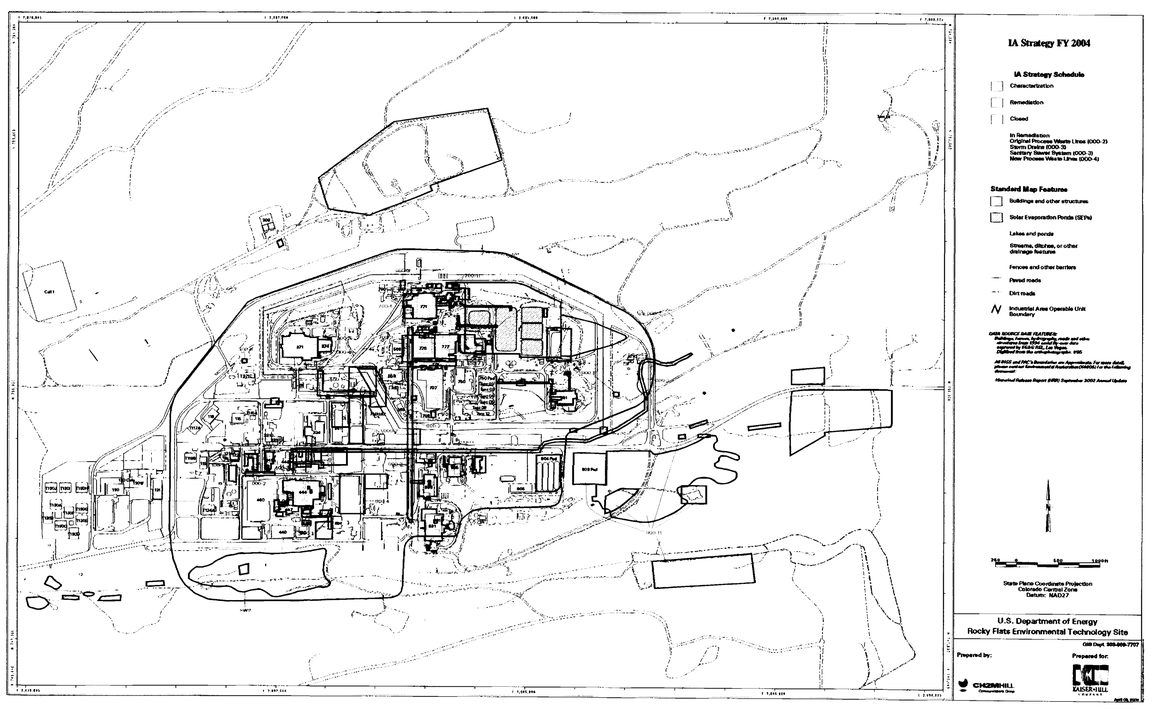
FY 2002



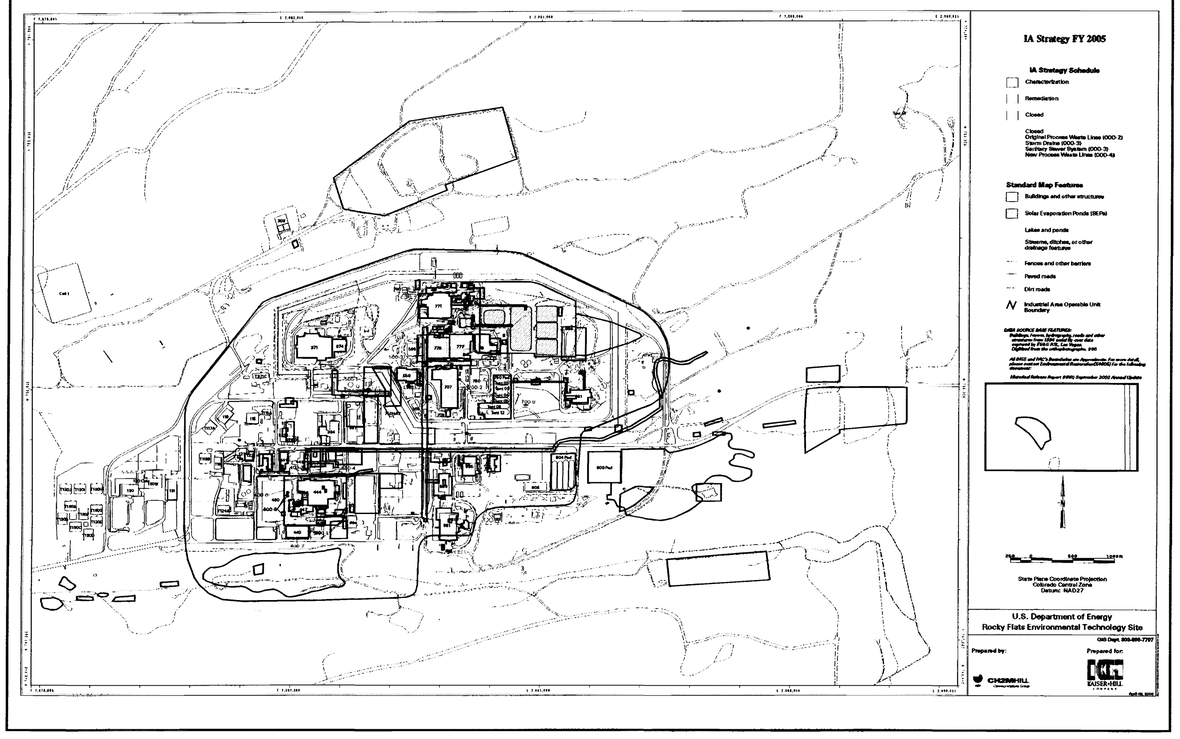
FY 2003



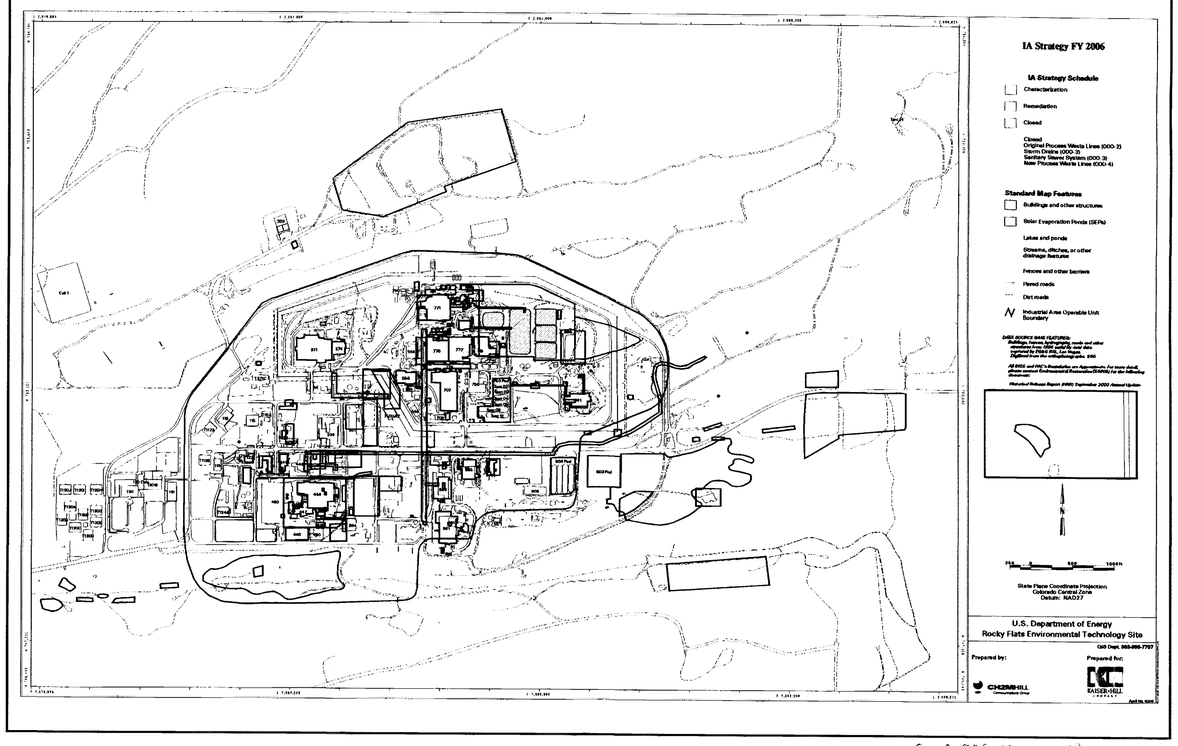
FY 2004



FY 2005



FY 2006



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NT_svr w:/projects/ias/sop/fy2003/schedules/closure_poster_fig-37.ami

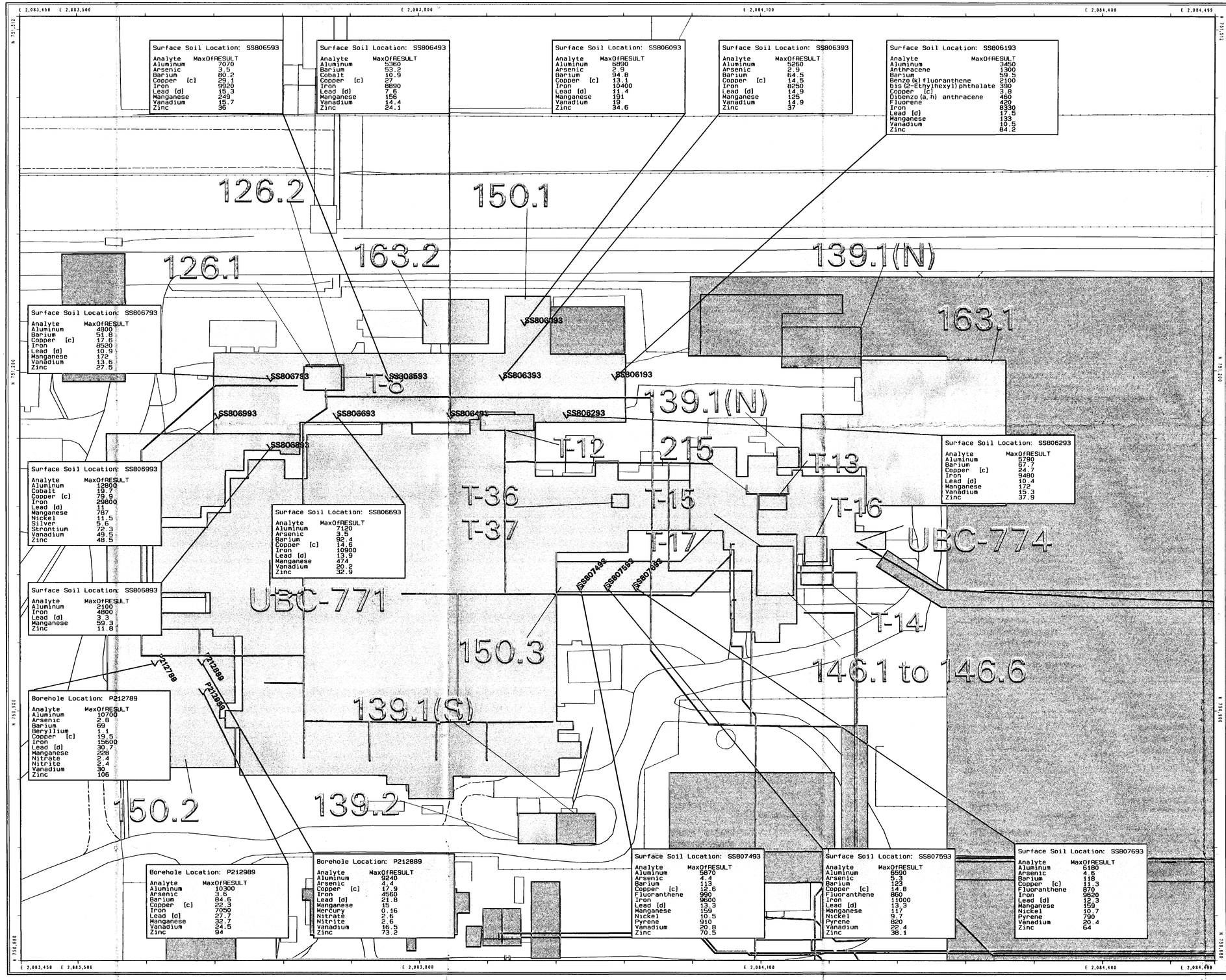

Figure E2
Draft
Existing Data

EXPLANATION

- Surface Soil Sampling Location
- Borehole Soil Sampling Location

IHSS Groupings

- 700-4
- Other IA Groups

Standard Map Features

- Buildings and other structures
- Solar Evaporation Ponds (SEP)
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Paved roads
- Dirt roads
- Industrial Area Operable Unit Boundary
- Original Process Waste Lines
- Location of Original Process Waste Lines that may have been removed

DATA SOURCE BASE FEATURES:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs. 1/95
Data Source:
IHSS data approved by Nick Demos (RMRS) 303-966-4605.

Scale = 1 : 490
1 inch represents approximately 41 feet

25 0 50 100ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

Prepared by: DynCorp — THE ART OF TECHNOLOGY

Prepared for: KAISER-HILL COMPANY

MAP ID: 2k-0404

July 17, 2001